Exhibit 46-1

Report of Professor Jerry Hausman

In re American Express Anti-Steering Rules Antitrust Litigation

June 6, 2014

I. QUALIFICATIONS AND STATEMENT OF ASSIGNMENT

- 1. I am the MacDonald Professor of Economics at the Massachusetts Institute of Technology ("MIT") in Cambridge, Massachusetts. I graduated from Brown University in 1968. I received a D.Phil. (Ph.D.) in economics in 1973 from Oxford University where I was a Marshall Scholar. I have been at MIT since completing my D.Phil. My academic specialties are econometrics, the application of statistical methods to economic data, and applied microeconomics, the study of behavior by firms and consumers. I teach a graduate course in applied industrial organization, which is the study of how markets operate.
- 2. I have been an associate editor of Econometrica, a leading economics journal, and the Rand (Bell) Journal of Economics, a leading journal of applied microeconomics. In December 1985, I received the John Bates Clark Award of the American Economic Association, awarded every other year for the most "significant contributions to economics" by an economist under the age of 40. In 1980, I was awarded the Frisch Medal of the Econometric Society. In 2013, I was named a Distinguished Fellow of the American Economic Association. I have been a member of numerous government advisory committees for both the U.S. government and the Commonwealth of Massachusetts. I have published over 170 academic research papers in leading economic journals, including the American Economic Review, Econometrica, and the Rand (Bell) Journal of Economics. My curriculum vitae is attached as **Attachment A**.
- 3. I have extensive experience analyzing antitrust and industrial organization issues. I have published a number of papers in this area, including "Competitive Analysis With Differentiated Products," Annales d'Economie et de Statistique, 1994; "Market Definition Under Price Discrimination," Antitrust Law Journal, 1996; "Valuation of New Goods Under Perfect and Imperfect Competition," in T. Bresnahan and R. Gordon, eds., The Economics of New Goods, University of Chicago Press, 1997; "Economic Analysis of Differentiated Products Mergers Using Real World Data," George Mason Law Review, 1997; "Efficiencies From the Consumer Viewpoint," George Mason Law Review, 1999; "A Consumer-Welfare Approach to the Mandatory Unbundling of Telecommunications Networks," Yale Law Journal, 1999; "The Competitive Effects of a New Product Introduction: A Case Study," Journal of Industrial Economics, 2002; "Does

Bell Company Entry into Long-Distance Telecommunications Benefit Consumers?," Antitrust Law Journal, 2002; "On Non-Exclusive Membership in Competing Joint Ventures," Rand Journal of Economics, 34, 2003; "Consumer Benefits from Increased Competition in Shopping Outlets: Measuring the Effect of Wal-Mart," Journal of Applied Econometrics, 2007; "Evaluation of Market Power Using a Competitive Benchmark Rather than the Herfindahl-Hirschman Index," 74, 2007; "Telecommunications in the US: From Regulation to Competition (Almost)," Review of Industrial Organization, 42, 2013.

- 4. I have extensive experience in antitrust matters. I have testified as an expert witness in a number of antitrust proceedings. My consulting and expert witness activity in civil litigation has been on behalf of both plaintiffs and defendants. I have also been involved in actions before the U.S. Department of Justice, the Federal Trade Commission, the Canadian Antitrust Agency, the Australian competition authorities, the New Zealand competition authorities, the U.K. competition authorities, the German competition authorities, the Slovenian competition authorities, and the European Commission. In addition, I have given a number of invited lectures on antitrust issues to members of the Department of Justice, the Federal Trade Commission, the Australian competition authorities, the UK competition authorities, the EU competition authority, and the American Bar Association.
- 5. I have been involved in the payments industry for approximately 20 years. I have consulted for many years for First Data, the largest U.S. acquirer. I participated in the DOJ investigation of the credit-card industry which led to the U.S. action against Visa and MasterCard. I consulted for First Data in its acquisition of Star and analyzed the debit card industry for the merger. I served as First Data's witness in its antitrust suit against Visa. I submitted three reports regarding the adequacy of the settlement in *In re Payment Card Interchange Fee and Merchant Discount Antitrust Litigation*. I have published academic research about the credit-card industry. I have given invited seminars about the credit-card industry in Berlin, Toulouse, New York, and Boston, and at a number of universities.

- 6. I served as Discover's expert witness on issues of liability and damages in its antitrust suit against Visa and MasterCard. Visa and MasterCard made a payment of \$2.75 billion to settle the case.
- 7. I was an expert witness for the New Zealand government on liability in its antitrust action again Visa and MasterCard. I have been an expert witness in numerous competition (antitrust) matters in Australia. These include competition in the retail sector where I have studied the use of payment cards in Australia. I have also studied the use of payments cards in the UK and other EU countries.

II. ASSIGNMENT

8. I have been asked by counsel for certain objectors to assess the competitive effects of the proposed Class Settlement Agreement in *In re American Express Anti-Steering Rules Antitrust Litigation*. In particular, I have been asked to assess the adequacy of surcharging as a market solution to the supra-competitive merchant fees charged by American Express ("AMEX"). I understand that certain provisions of the proposed settlement are mandatory on all class members without individual class members having the ability to "opt out" of the settlement with respect to these provisions. Counsel also asked me to review the Declaration of Dr. Alan S. Frankel ("Frankel Decl."), which he submitted in support of the proposed settlement, to assess the reliability of Dr. Frankel's conclusions.

III. SUMMARY OF OPINIONS

9. My conclusions are as follows:

 The market for credit cards is a separate economic market. AMEX has significant market power in this market and charges merchants supracompetitive fees for merchants' acceptance of AMEX credit cards. These

AMEX is a "three-party" network rather than the Visa and MasterCard ("VMC") "four-party" networks. AMEX charges a merchant discount fee which combines interchange fees and network and processing fees which are typically separate for the VMC networks. When discussing VMC "merchant fees," I will combine interchange fees and network and processing fees to compare to AMEX merchant fees.

- fees act as a "tax" on merchants and, in part, are passed on to consumers through higher prices.
- Surcharging will not eliminate or discipline the market power exercised by AMEX. While a small number of merchants may be able to utilize the proposed settlement's limited surcharging provisions, there is no basis to conclude that such isolated surcharging would have any system-wide impact.
 - Several additional factors, individually and collectively, severely limit the value of the proposed settlement's new surcharging rules. These additional factors include the competitive U.S. retail environment, which will cause merchants to lose sales and profits from surcharging and which thereby prevents them from surcharging, and legal prohibitions against surcharging in states representing approximately 35% of U.S. commerce.
 - o Contrary to encouraging competition among the credit-card networks, the settlement's provisions prohibit merchants from using higher surcharges for AMEX than for Visa and MasterCard ("VMC"), even though AMEX merchant fees are typically higher than VMC merchant fees. This will increase the likelihood of a continuation of the current oligopoly outcome. AMEX merchant fees will not decrease and may well further increase. Even worse, since the surcharge amounts of AMEX and VMC will be the same under the settlement, an outcome equivalent to price fixing among the three major credit-card networks will occur.
- Dr. Frankel claims (Frankel Decl. ¶ 15) that "the ability to surcharge credit card transactions benefits merchants by enabling them to recoup the cost of credit card acceptance, by shifting transactions to lower cost payment methods such as debit cards and cash, by generating competitive constraints on the level of fees charged by credit card networks, and by shifting [sic] general consumer payment patterns away from credit cards

and towards debit cards." I do not find Dr. Frankel's claims on the effects of surcharging to be reliable, because they are not based on accepted economic or econometric analysis. He has provided no economic or econometric bases for his main conclusions. My major points of disagreement are:

- o In concluding that surcharging will enable merchants "to recoup the cost of credit card acceptance" and generate "competitive constraints on the level of fees charged by credit card networks," Dr. Frankel ignores the economic realities that merchants will not surcharge because of: (1) the highly competitive nature of the U.S. retail industry which results in lost sales and lost profits from surcharging credit cards; and (2) numerous state laws prohibiting surcharging, which Dr. Frankel acknowledges but does not properly take into account. He claims that merchant fees will change throughout the U.S. and will benefit merchants in states which prohibit surcharging. This claim is based on no accepted economic analysis.
- o In concluding that surcharging will enable merchants to "shift[] transactions to lower cost payment methods such as debit cards and cash," Dr. Frankel ignores the economic data that consumers' demand for general-purpose credit cards is inelastic and that consumers do not view debit cards and cash as close substitutes for credit cards.² As the data show, merchants are more likely to lose customers than to shift them to debit cards or cash when they surcharge. To the extent some customers do shift to debit cards or cash for small-value purchases, any savings from that marginal shift for most merchants are likely to be outweighed by lost sales from customers that do not shift and instead shop elsewhere. The

When I refer to elasticity here, I mean the demand elasticity overall for credit cards compared to other types of payments such as debit cards and cash, not the elasticity for a particular brand of credit card, e.g., a Chase United Airlines Visa Card.

ability to surcharge will only be useful to a small portion of merchants.

- The experience of over 10 years of surcharging in Australia and 20 years
 of surcharging in the UK, where surcharging has had no impact on
 system-wide merchant fees, reinforces the conclusion that the majority of
 U.S. merchants will not use surcharging because of the sales they would
 lose.
- By not permitting differential surcharging, the proposed settlement removes the potential for some merchants to bargain for lower AMEX merchant fees by threatening to surcharge AMEX more than VMC.
- Dr. Frankel makes no claims that the settlement will lead to reduced AMEX merchant fees, and I expect AMEX merchant fees to remain the same or increase if the settlement occurs. Thus, the large majority of merchants will receive no economic benefit from the settlement, since no cash payment is proposed in the settlement. In addition, this outcome creates a potential conflict among class members. Class members, especially small- to medium-size merchants who will not be able to surcharge because of competition, will be made worse off by the settlement since AMEX merchant fees to them are likely to increase. In contrast, the limited number of merchants who surcharge will receive some economic benefit from the settlement. These two segments of the class have opposing economic interests regarding the outcome of the proposed settlement.

IV. INDUSTRY BACKGROUND

10. Payment cards include credit cards, charge cards, debit cards, stored-value (or prepaid debit) cards, and single-purpose store cards, which are all used as methods of payment but which differ in other important characteristics.

11. Payment cards can be divided between general-purpose cards, which are accepted at many different merchants, and single-purpose cards (also known as "proprietary cards"), which are accepted at a single merchant or small group of related merchants.³

A. Credit and Charge Cards

- 12. Credit cards allow a consumer to purchase goods and services by accessing a revolving line of credit extended to the cardholder by the financial institution that issued the card. The cardholder receives a monthly bill and can choose to pay the bill in full or to pay only a portion of the bill and revolve the balance. If the cardholder pays the bill in full, typically no interest is charged.
- 13. Charge cards, also known as travel and entertainment ("T&E") cards, are very similar to credit cards except that they require that the consumer pay off the balance owed upon receipt of their statement, usually monthly. Examples of charge cards include the traditional American Express card and the Diners Club ("Diners") card. For convenience, I refer to both credit and charge cards as "credit cards."
- 14. Many credit cards offer "rewards" to cardholders, e.g., airline miles or "cash-back" rebates. Credit-card issuers (e.g., banks and AMEX) fund these rewards mainly using a portion of the merchant fees they charge merchants. Credit-card issuers typically charge merchants higher fees when cardholders use rewards cards.

B. Debit Cards

- 15. Debit cards allow a consumer to purchase goods and services by directly accessing the consumer's asset account, usually a demand deposit account ("DDA") or checking account. Debit cards include stored-value cards, such as payroll cards or health service account cards (where funds are pre-loaded into an account associated with the card and the cardholder can only spend up to the amount pre-loaded on the card). Depending on the type of debit transaction, payment is withdrawn from the cardholder's account and transferred to the merchant within one to several days later.
- 16. There are two types of debit cards available that differ in the way cardholder transactions are authenticated and settled. In a "PIN debit" transaction, the transaction is

Most single-purpose cards are credit or charge cards rather than debit cards. General-purpose cards may be either credit, charge, debit, or stored-value cards.

authenticated at the point-of-sale by use of the same personal identification number ("PIN") that the cardholder uses to withdraw money from an automated teller machine ("ATM"). In a signature debit transaction, the transaction is authenticated at the point-of-sale by obtaining the cardholder's signature in the same way that credit card transactions are verified.

- 17. With both forms of debit, authorization involves an attempt to confirm that the cardholder's asset account has sufficient funds to pay for the transaction. Settlement of those transactions involves the transfer of funds from the cardholder's asset account to the merchant's bank account. The difference is that PIN debit transactions are always authorized on-line and settlement usually occurs either later that day or the next day. PIN debit transactions are referred to as "single message" transactions because the electronic message sent from the merchant to the card issuer contains the information needed to both authorize and settle the transaction. As a result, with a PIN debit transaction, once a transaction is authorized, the funds are effectively taken from the cardholder's account.
- 18. Most debit cards can be used to make both signature and PIN debit transactions. This outcome is a by-product of the historical development of debit. Banks initially issued ATM cards that could be used only to make deposits or withdraw cash at the ATM machines that were connected to the network(s) to which the bank belonged. In the 1980s, these ATM networks were extended to provide point-of-sale PIN debit functionality when merchants started installing PIN pads. These debit cards (which also could be used as ATM cards) typically bore the logos of multiple PIN debit networks from around the country. Visa and MasterCard began actively marketing signature debit in the 1990s and, in many cases, the Visa or MasterCard logo was added to a card that already provided PIN debit and ATM functionality. Interchange fees on most debit cards are now capped by the Federal Reserve Board under legislation (the Durbin Amendment) passed by Congress in 2010.

⁴ Merchants must install specialized equipment known as PIN pads to allow consumers to elect the PIN-authorization feature.

V. AMEX, Visa, and MasterCard Have Significant Market Power Which Results in Supra-competitive Merchant Fees

19. I first discuss the antitrust markets in which I do my economic analysis.

A. General-Purpose Credit-Card Network Services Market

- 20. There is a relevant product market for general-purpose credit-card network services.
 Merchants have a derived demand to accept credit cards, which arises in substantial part from consumers' preferences to use credit cards.
- 21. From the consumer perspective, there are no close substitutes for general-purpose credit cards. Consumers use credit cards for completing transactions and as a source of credit. While consumers also use other means of payment, i.e., cash, checks, debit cards, and single-purpose cards, and other sources of credit, e.g., secured loans and overdraft protection, the fact that consumers may rely upon several different payment methods does not indicate that those products are substitutes for any particular class of transactions. Rather, it can indicate that the products are complements. My knowledge of the industry suggests that is the case here. If a hypothetical monopolist of credit-card issuing reduced rewards on average by 5% (or imposed some other effective 5% price increase such as reducing the "float" period), it is very unlikely that it would be unprofitable given the limited availability of bank overdraft offerings or other alternative credit facilities in the United States.
- 22. General-purpose credit cards provide deferred payment and the opportunity to revolve balances over time. Other payment systems do not offer credit facilities. Therefore, general-purpose credit cards are better suited for large purchases that a consumer needs to finance over time than are payment methods such as cash, checks, and debit cards that do not allow deferred payment. This feature is reflected in studies of consumer payment patterns, which show that the average transaction size for credit-card transactions consistently has significantly exceeded the average size (or "ticket") for debit-card transactions since the mid-1990s.

In the case of charge cards, payment is deferred but the credit extension is available for only a limited period of time.

⁶ Banks offer overdraft facilities on individual checking accounts. However, overdrafts are rarely used because of their high fees and limits.

- 23. In *U.S. v. Visa*, Judge Jones found that "consumers also do not consider debit cards to be substitutes for general purpose [credit and charge] cards." That is my conclusion also. The court also found that issuing banks "do not view cash or checks as 'competitive' with general purpose [credit and charge] cards." I agree with that conclusion, as most consumers do not want to carry large sums of cash to make large purchases, and checks do not match the acceptance of general-purpose credit cards. Single-purpose cards, for their part, do not offer the widespread acceptance of general-purpose credit cards and, thus, they are not close substitutes for general-purpose credit cards.
- 24. The court also found in *U.S. v. Visa* that "[s]ince the merchants' demand for general purpose cards is derived from consumers' demand to use these cards, their attitudes also reflect consumer attitudes." ¹⁰ I agree with that, and evidence from the merchant side of the network market supports my conclusion that credit cards comprise a relevant market. Declarations from merchants objecting to the proposed settlement state that they cannot stop accepting credit cards. ¹¹ Many merchants further state that they cannot remain competitive without accepting AMEX credit cards. ¹² Virtually no merchants have ceased accepting Visa or MasterCard despite significant increases in their credit-card merchant fees since the early 1990s, and merchants have also generally continued to accept AMEX despite significant increases in AMEX merchant fees in recent years.
- 25. Industry trends after 2000 further support my conclusion that credit cards comprise a relevant market. Since 2000, Visa and MasterCard have continued to raise merchant fees, including significant interchange rate increases for rewards cards and VMC "premium products," and merchants have not stopped accepting VMC credit-card transactions. This shows that merchants continue to believe that a sufficient number of consumers view credit cards as unique.

United States v. Visa U.S.A. Inc., 163 F. Supp. 2d 322, 336-38 (S.D.N.Y. 2001).

^o United States v. Visa, 163 F. Supp. 2d at 336.

Statement of Irene Katen before H. Subcomm. on Financial Inst. of the H. Comm. on Banking and Financial Services (Sep. 24, 1997) (**Attachment B**).

United States v. Visa, 163 F. Supp. 2d at 337.

See, e.g., Academy ¶ 4; Barnes & Noble ¶ 5; Barnes & Noble College ¶ 5; Beall's ¶ 3; Boscov's ¶ 3; The Buckle ¶ 3; Crate & Barrel ¶ 4; Dillard's ¶ 6; The Gap ¶ 4; The Mills Companies ¶ 3; Panda Restaurant Group ¶ 3; Panera ¶ 3; PetSmart ¶ 3; REI ¶ 4; Republic Services ¶ 4.

Ibid.

- Also, the weighted average interchange rate for PIN and signature debit decreased from approximately 1.30% in January 2011 to approximately 0.79% in 2012 since the advent of Federal Reserve Board regulation capping debit interchange rates. Frankel Decl. ¶ 27. Despite this decrease of over 60% in debit-card interchange fees, VMC's credit-card interchange fees have remained largely unchanged and the merchant fees for AMEX have also remained largely unchanged in response to substantially reduced debit-card fees to merchants. The absence of sensitivity of credit-card interchange rates to interchange rates for debit cards provides strong economic evidence that credit cards and debit cards are not in the same relevant market.
- 27. AMEX charges higher merchant fees than do Visa and MasterCard (the sum of VMC interchange fees and fees charged by merchant acquirers). Thus, the cost of a merchant accepting an AMEX card typically exceeds the cost of a merchant accepting a VMC card for a given purchase. The average cost to a merchant for AMEX is higher than the average cost for VMC. Dr. Frankel also finds that the average AMEX merchant fee was 2.61% in 2010 compared to 2.43% for Visa and 2.45% for MasterCard. Frankel Decl. ¶¶ 29, 31. AMEX increased its merchant fees during 2005-2011 to particular sectors in its "value recapture" program without losing significant card acceptance or losing credit-card volume to VMC. 14
- 28. The events in 2003 following the settlement of the merchant class action challenging the Honor All Cards ("HAC") tying rules for debit cards, *In re Visa Check/MasterMoney Antitrust Litigation* ("Visa Check"), also support the conclusion that credit cards and debit cards are in separate markets. The settlement required Visa and MasterCard to untie credit- and debit-card acceptance and give merchants the right to choose to accept one product without the other. Once the settlement went into effect and the tie between credit and debit acceptance was broken, Visa and MasterCard increased credit-card interchange rates and reduced signature debit rates. This outcome demonstrates that credit cards and debit cards are in separate markets.

However, debit-card fees have increased for some small-ticket merchants.

See, e.g., Memorandum & Order, *United States v. American Express Co.*, No. 1:10-cv-04496-NGG-RER (E.D.N.Y. May 7, 2014), Doc. 369, p.15 (**Attachment C**).

- 29. Thus, the evidence demonstrates that credit cards have a unique bundle of characteristics that consumers find useful for certain types of transactions, and for which other payment methods are not close substitutes. A market-wide increase in cardholder fees would not cause sufficient decline in usage for the price increase to be unprofitable; demand is sufficiently inelastic to establish a market for general-purpose credit-card network services. Because consumers view credit cards as unique, there are no close substitutes available for issuing banks. As the court held in *U.S. v. Visa*, "it is highly unlikely that there would be enough cardholder switching away from credit and charge cards to make any such [hypothetical] price increase unprofitable for a hypothetical monopolist of general purpose [credit and charge] card products." For the reasons detailed above, I agree with that and see no changes in the market since 2000 that would alter that conclusion.
- 30. Since credit cards and debit cards are in separate markets, they are not highly substitutable. Many consumers use credit cards because of features such as revolving credit and the rewards offered by credit cards. Debit cards do not offer credit, and debit-card rewards have largely been stopped by regulated banks (those with \$10 billion or more in assets) since federal regulation capped debit interchange. These credit-card customers will not switch to debit cards, and they will favor merchants that do not surcharge credit cards. Thus, the portion of credit-card customers who will switch to debit cards in response to credit-card surcharging will be small.

B. General-Purpose Debit-Card Network Services Market

- 31. There is a relevant product market for general-purpose debit-card network services. This market consists of both signature and PIN debit cards. Merchants have a derived demand to accept debit cards, which arises in part from customers' preferences to use debit cards.
- 32. Both PIN and signature debit cards offer basically the same functionality to consumers a means of payment that is widely accepted and that provides for a quick and automatic transfer of funds from the cardholder's asset account (usually a checking account) to the merchant's account. While the signature and PIN methods of authentication differentiate

¹⁵ United States v. Visa, 163 F. Supp. 2d at 336.

Pulse 2013 Debit Issuer Study, slides 3, 11 (Oct. 30, 2013) (**Attachment D**).

- the products, consumers tend to view them as close substitutes and often are largely indifferent about the two products. This substitution is demonstrated by merchants' increasing success at steering consumers from signature to PIN debit, as merchants could not do that unless consumers viewed PIN debit to be a close substitute for signature debit.
- 33. Because signature and PIN debit are viewed as close substitutes by consumers, merchants also view them as largely interchangeable. Since the mid-1990s, industry observers have predicted that signature and PIN debit interchange rates would converge. This convergence has intensified in recent years, as demonstrated by the pattern of interchange changes following settlement of the Visa Check case. Prior to the settlement, because of HAC tying rules, signature debit was priced very similarly to credit, and PIN debit interchange rates were significantly lower. After the settlement, as noted above, both Visa and MasterCard increased their credit interchange rates and lowered their signature debit interchange rates. Thus, credit and debit interchange rates diverged, and signature and PIN debit interchange rates converged. Signature debit rates remained relatively constant while PIN debit rates increased. This outcome is exactly what one would expect to occur if signature and PIN debit were in the same relevant market and the tie between credit and signature debit was effective at raising the price of signature debit above what it would have been if it had to compete on an unfettered basis with PIN debit. Since Federal Reserve Board regulation began, interchange rates for PIN debit and signature debit are identical for regulated banks which make the two types of debit even closer substitutes.17
- 34. General-purpose debit cards possess a combination of characteristics that make them particularly well suited for certain types of transactions. Because payments are deducted in a matter of hours (or a few days at most) from a consumer's DDA, debit cards are strongly differentiated from credit and charge cards. Consumers do not consider general-purpose credit cards to be an adequate substitute for general-purpose debit cards. Consumers have tended to use debit cards for everyday purchases, such as groceries, small household items and other small-value purchases, especially of non-durable goods. Many consumers segment their purchases and prefer to put these everyday purchases on

Approximately 2/3 of debit-card volume is from regulated banks. Small banks remain unregulated.

- their debit cards, and use their credit cards for larger-ticket items that are not consumed on a monthly basis.
- 35. Debit cards are safer than carrying cash and do not require that a consumer plan ahead, e.g., withdraw cash from a bank account, in order to make purchases. Debit cards are more widely accepted than checks, making them suitable for transactions at many merchants where checks are not an option.
- 36. Debit cards replace cash and check transactions. This fact does not indicate, however, that debit cards, cash, and checks are in the same market. Consumers view debit cards as superior to cash and checks and, thus, they likely would not switch to cash and checks in response to a small, but significant, non-transitory price increase. To assert that debit cards are in the same market as cash and checks is akin to saying that typewriters are in the same market today as personal computers.
- 37. Visa's success in increasing PIN debit interchange rates using its PIN debit product Interlink also demonstrates that cash and checks do not sufficiently restrain debit card usage to include cash and checks in the same market as debit. Beginning in 1999, Visa several times raised Interlink PIN debit interchange rates to make them the highest rates in that segment of the market. These increases forced competing networks to follow suit with their PIN debit rates, resulting in a segment-wide effective interchange increase of over 200% since 1998. While merchants complained about these substantial increases to PIN debit interchange rates, none dropped PIN debit or shifted a sufficient volume of PIN debit transactions to cash and checks to constrain these price increases. This outcome supports the conclusion that cash and checks are not in the same market as debit cards.

C. Geographic Markets

38. The geographic dimension of the relevant markets defined above is the United States. The AMEX rules, e.g., no surcharging, apply only to the U.S. market, so a proper analysis of competitive effects should focus on the United States. The fact that AMEX, along with Visa and MasterCard, sets policies and pricing—including merchant fees—

 $^{^{18}}$ Dr. Frankel agrees that between 2000 and 2011 and the onset of regulation, PIN debit interchange fees increased converging towards signature debit interchange fee rates. Frankel Decl. \P 26.

separately for the United States from other regions also implies a recognition that the United States is a separate geographic area of competition.

The geographic scope of the relevant markets is not broader than the United States because U.S. consumers would not find credit or debit cards issued in other countries — and therefore other currencies — to be good substitutes for credit or debit cards issued by U.S. banks.

D. Market Power

39. Significant barriers to entry exist in the general-purpose credit-card network services market as there has been no new entry since Discover entered in the mid-1980s.¹⁹ Further, most merchants do not find it economic to refuse to accept AMEX (or VMC) credit cards. Merchants have a derived demand to accept credit cards, which arises in substantial part from customers' preferences to use credit cards. The typical fee that a merchant pays for a credit-card transaction is 2%-3% of the transaction amount. The incremental profit for most merchants from accepting credit cards is typically 20%-30% or higher. Thus, if a significant proportion of customers decide not to shop at a merchant who refuses to accept credit cards, the merchant's lost profit on the lost business significantly exceeds the credit-card fee. ²⁰ A similar lost-profit outcome holds for surcharging, as I discuss below. Especially in a competitive sector where numerous merchants offer similar products, unless all (or almost all) merchants refuse to accept AMEX credit cards, each individual merchant will accept AMEX credit cards because of the lost incremental profits if they refuse to accept AMEX credit cards. Some merchants, mostly "low-ticket" merchants, do not accept AMEX cards which usually have a higher

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PayPal is a new entrant offering a payments function. In the future, PayPal may develop into a competing network, although currently it is too early to tell what will happen.

In Australia, according to the report which Dr. Frankel references, VMC credit cards are accepted at 100% of all merchants in the sample, which exceeds the 96.9% acceptance for debit cards (and EFTPOS). East and Partners, "Australian Merchant Payments," Figure 2, p. 8 (Dec. 2013).

- fee than Visa or MasterCard. ²¹ I have estimated that merchants that currently accept AMEX cards represent 90% of total credit-card transaction volume in the U.S. ²²
- 40. Potentially, AMEX, Visa, and MasterCard could compete against each other at a sufficient level to keep credit-card merchant fees to a competitive level. AMEX, Visa, and MasterCard cards are highly substitutable ("fungible") products with similar merchant acceptance, so a significant amount of competition could occur if merchants could credibly commit to accepting only the less costly of AMEX, Visa, or MasterCard. However, this competition has not occurred in practice.
- 41. A number of reasons have led to this outcome. Credit-card issuers compete on their rewards programs, e.g., airline miles or "cash back," as well as the interest rates they charge consumers. The rewards programs are mainly funded by the interchange fees that credit-card issuers (banks) receive from VMC or by AMEX with the merchant fees it charges. If, say, MasterCard charged significantly lower interchange fees than AMEX, AMEX would offer more attractive rewards programs to consumers to switch them to AMEX. Thus, MasterCard would increase its interchange rates as a competitive response. This outcome, sometimes called "perverse competition," leads to higher merchant fees, not lower merchant fees, as an outcome in two-sided markets. Credit-card markets are what economists refer to as "two-sided" markets, where both merchants and consumers must use credit cards for card issuers to be profitable. However, the most important reason for the absence of credit-card network competition for merchants is that most merchants must accept AMEX, Visa, and MasterCard credit cards, or their sales and

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While consumers who use credit cards often spend more on average than other consumers at a given merchant, credit-card usage does not lead to increased overall spending in the economy. Consumers must still live by their budget constraints, which limits their overall spending. However, credit-card users are typically, on average, higher-income consumers who consume at higher levels, and would do so even if credit cards did not exist.

Report of Professor Jerry Hausman, *In re Payment Card Interchange Fee and Merchant Discount Antitrust Litig.*, No. 05-md-1720 ("*Interchange MDL*") (E.D.N.Y. May 28, 2013), Doc. 2670-5 (Hausman Initial Report), ¶ 65 (**Attachment E**). Neither Dr. Frankel nor any other submission disagreed with my estimate. See also Amended Complaint, *United States v. American Express Co.*, No. 10-cv-4496 (E.D.N.Y. Dec. 21, 2010), Doc. 57, ¶ 65. An AMEX executive is also quoted as using the 90% figure.

AMEX has followed a high-interchange, affluent-consumer strategy to a large extent. Thus, AMEX has not provided a constraining force on VMC interchange.

For example, Canada's Competition Bureau has described the outcome in credit cards as perverse competition. The Globe and Mail, "Competition Bureau Says Credit Card Issuers Set Up Perverse System, (Jun. 18, 2012) (**Attachment F**).

- profits would decrease. Since merchants have little choice about credit-card acceptance, they pay the higher fees imposed by AMEX, Visa, and MasterCard, and there is no competition among these three networks leading to lower prices for merchants.
- As I discussed above, AMEX also charges supra-competitive merchant fees, which are higher than VMC merchant fees (the combination of VMC interchange fees and merchant acquirer fees). Thus, AMEX acceptance of a given transaction usually costs a merchant more than acceptance of a Visa, MasterCard, or Discover credit card. However, merchants have not been permitted to attempt to steer AMEX card users toward using their Visa, MasterCard, or Discover cards. The proposed settlement will eliminate any economic incentive for a merchant to attempt to steer business away from AMEX using surcharges, since the permitted surcharge for AMEX can be no larger than the surcharges for VMC or Discover cards, even though the costs of those cards are lower than AMEX cards.
- 43. Similar competitive dynamics previously existed in the debit-card market prior to the beginning of federal regulation. All consumers who have a bank account will have a single bank-issued debit card which typically can be used either as a PIN debit card or as a Visa or MasterCard signature debit card, or both. Thus, competition between Visa and MasterCard was to have banks adopt their signature debit cards. Visa historically increased Interlink interchange fees, which caused PIN debit networks, e.g., STAR, to increase their interchange fees. Since Visa signature debit and Interlink were the only choices on approximately 100 million debit cards prior to federal regulation, Visa was able to increase Interlink rates because the only alternative was even more costly Visa signature debit rates for these debit cards. Again, most merchants did not have the economic ability to refuse to accept VMC debit cards so they paid the higher interchange fees. To correct this market failure, Congress passed the Durbin Amendment in 2010 and the Federal Reserve Board now caps most debit-card interchange. The significant decrease in debit-card fees with the advent of regulation demonstrates that the preregulation debit-card fees were at supra-competitive levels.

See, e.g., **Attachment C** at 15. Judge Garaufis notes evidence that AMEX charges higher merchant fees than VMC and AMEX increased its merchant fees in its "value recapture" program on incremental price increases to particular merchant sectors during 2005-2011.

- VI. The Settlement's Modification of AMEX's Surcharging Rules Is Unlikely to Reduce Merchant Fees; To the Contrary, It Will Likely Enable AMEX to Increase Merchant Fees
- 44. Dr. Frankel considers the modification of the AMEX prohibition on credit-card surcharges to be the most important change arising from the Settlement. Frankel Decl. ¶
 15. Dr. Frankel claims (¶ 15) that "the ability to surcharge credit card transactions benefits merchants by enabling them to recoup the cost of credit card acceptance, by shifting transactions to lower cost payment methods such as debit cards and cash, by generating competitive constraints on the level of fees charged by credit card networks, and by shiftting [sic] general consumer payment patterns away from credit cards and towards debit cards." I disagree that the settlement's surcharging modification is significant and I expect that surcharging permitted by the settlement will neither result in the majority of merchants recouping their costs of accepting AMEX, nor shift significant transactions to lower-cost payment methods, nor reduce the merchant fees charged by AMEX. I explain, below, the reasons for my conclusion. Dr. Frankel has done no empirical economic analysis which permits him to conclude that the settlement's limited permission for merchants to surcharge will result in his claimed benefits.
- 45. As I explained above, because consumers do not view debit cards (or cash) as close substitutes for credit cards, most consumers will not shift from credit cards to debit cards in response to credit-card surcharging and, instead, will favor merchants that do not surcharge credit cards. This consumer behavior is why surcharging is not profitable for merchants in competitive markets and why the majority of merchants will not do it. The following example illustrates the point. If a merchant attempts to surcharge, the merchant would recover approximately 2.0%-2.5%. However, some customers would choose to go to another store. An Australian survey found that 14% of customers would go to another store for a 1% surcharge, and I expect the percentage of lost customers to increase as the surcharge increases.²⁶ Typical incremental margins for retail merchants

²⁶ See J. Bagnall, S. Chong and K. Smith, "Strategic Review of Innovation in the Payments System: Results of the Reserve Bank of Australia's 2010 Consumer Payments Use Study," p. 31 (2011) (**Attachment G**). In New Zealand, which has permitted surcharging for the past three years, a recent survey found that 90% of consumers said they

are 20%-30% or higher.²⁷ To use 25% margins as an example, if 14% of customers go to another store which does not surcharge, then the merchant loses on average 3.5% of incremental profit, which exceeds the surcharge. Over time, when customers become accustomed to the surcharge policy, I expect greater than 14% to shop at a competing store which does not surcharge.²⁸ I also expect this percentage to be even higher in the U.S., where retail competition is greater than in Australia. For example, Wal-Mart does not operate stores in Australia. For the effect of Wal-Mart on increasing competition in the U.S., see, e.g., J. Hausman and E. Leibtag, "Consumer Benefits from Increased Competition in Shopping Outlets: Measuring the Effect of Wal-Mart," *Journal of Applied Econometrics*, 2007.

46. Dr. Frankel has previously agreed with my analysis:

Removing restrictions on surcharging is not a complete solution [to higher merchant fees], because merchants find it difficult to surcharge when their competitors are not (and those competitors may receive lower interchange fees), and it is costly to explain surcharges and existence of lower cash prices to consumers... ²⁹

The effect of competitors not surcharging and engaging in a "business-stealing" strategy from merchants who attempt to surcharge will place a significant constraint on surcharging, as data from Australia and the UK demonstrate, which I discuss below.

47. Thus, under competition, the "business-stealing" incentive of individual merchants will cause them not to surcharge which will then cause merchants who attempt to surcharge to stop surcharging because it leads to lower overall profits. This competitive effect leads me to conclude that the large majority of merchants will not surcharge.

would go to another merchant rather than pay a surcharge of 3% ImpactPR, "Shoppers Resent Credit Card Charge Research (Apr. 2012) (**Attachment H**).

By incremental margins, I mean price minus variable cost, not including fixed costs.

IKEA Group (the international furniture merchant) stopped surcharging in the UK because it was the only major retailer to surcharge, and customer losses to merchants who did not surcharge were a significant factor in causing it to stop surcharging. IKEA believes the highly competitive environment in the U.S. will "render the practice [of surcharging] cost ineffective to IKEA US." Declaration of IKEA US, *Interchange MDL* (E.D.N.Y. May 25, 2013), Doc. 2458, p. 14 (Attachment I).

A. Frankel, "Towards a Competitive Card Payments Marketplace," Reserve Bank of Australia Conference, p. 34 (Nov. 29, 2007) (Attachment J).

- 48. Dr. Frankel suggests that merchants will surcharge after the settlement goes into effect because of the difference between credit and debit merchant fees. This conclusion ignores the fact that most consumers will not switch from credit to debit because they do not view the products as close substitutes. Dr. Frankel's conclusion also ignores the fact that most merchants will not surcharge because of competition in their industries. Given the limited number of consumers who may be willing to switch to debit from credit due to surcharging, and the cost of lost sales from surcharging, I conclude that most merchants will not surcharge and the fact that they pay more for credit will not cause them to surcharge.
- Dr. Frankel refers to a recent survey conducted by the Olinger Group and commissioned 49. by the plaintiffs' law firm about U.S. merchants' intention to surcharge. Frankel Decl. ¶ 44. The survey has methodological flaws but, more importantly, it is not a random survey of U.S. merchants. I note that no supermarkets, food retailers, or mass merchandisers were included in the survey, although these are among the largest segments of U.S. retail commerce. Other large retail segments such as drug stores and restaurants are also not included in the survey. These excluded segments of the retail economy are among those that face the greatest competition and therefore are least likely to surcharge credit-card transactions. Instead, the survey includes non-retailers, e.g., law firms and accounting firms, and other segments which face less competition than the large retail segments that the survey excludes and thus are more likely to surcharge credit cards.³¹ The Olinger survey is thus biased in favor of surcharging through its selection of survey respondents ("selection bias") and is not based on a random sample. In the absence of a random sample, "there is no hope whatever of our being able to make scientific statements about the population from the knowledge we shall obtain in the sample."³² Thus, the survey sample frame fails a basic test of survey design and yields

See Declaration of Jude Olinger (Apr. 11, 2014).

The other businesses surveyed were: dry cleaners; livery/taxi; auto-related services; home improvement; furniture/antique stores; and beauty. See id.

Alan Stuart, The Ideas of Sampling, (Charles Griffin, 1984), p. 2.

biased and non-representative results.³³ Further, it is widely recognized that survey respondents' stated intentions in response to a survey question are typically a significantly upward-biased estimate of actual behavior.³⁴ The Olinger survey analysis (Exhibit A) makes no attempt to correct for this well-known bias.

- 50. Given that the large majority of merchants will not surcharge due to competition, merchants largely will not be able "to recoup the cost of credit card acceptance," as Dr. Frankel claims. Further, general consumer payment patterns will not shift by a significant amount to debit cards (or cash) because consumers gain rewards and the use of credit with credit-card usage, while these factors are absent from debit-card usage. Evidence from both Australia and the UK, each of which has allowed surcharging for over 10 years, demonstrates this result, as discussed below.
- 51. Moreover, as discussed below, since merchants will not be permitted to surcharge AMEX credit-card transactions unless they also surcharge VMC credit-card transactions equally, I find it likely that AMEX will increase its merchant fees relative to VMC or Discover because AMEX knows merchants cannot steer consumers to VMC or Discover credit cards by not surcharging them or surcharging them less than AMEX credit cards.
- 52. Additional reasons for the ineffectiveness of surcharging arising from the proposed settlement are:
 - Ten states currently prohibit surcharging and they represent approximately 35% of U.S. commerce.
 - Experience in Australia, which has permitted surcharging for 10 years, and in the UK, which has permitted surcharging for over 20 years,

³³ I have extensive experience in survey design and evaluation. In addition to my academic research, I served as a Member of the Committee on National Statistics, which is an advisory panel of the federal government to improve the design of federal-government surveys of the Bureau of Labor Statistics and other government agencies.

See, e.g., C. Hsiao, B. Sun and V.G. Morwitz, "The role of stated intentions in new product purchase forecasting," *Advances in Econometrics*, Vol.16, pp.11-28 (2002) (**Attachment K**); P. Chandon, V.G. Morwitz and W.J. Reinartz, "Do Intentions Really Predict Behavior? Self-Generated Validity Effects in Survey Research," *Journal of Marketing*, Vol. 69, pp. 1-14 (April 2005) (**Attachment L**); and V. Morwitz, J.H. Steckel and A. Gupta. "When do purchase intentions predict sales?," *International Journal of Forecasting*, 23, 347-364 (2007) (**Attachment M**).

³⁵ A federal court recently found that the New York state prohibition on surcharging is unconstitutional. If that court's judgment is reversed, the percentage of retail sales subject to a no-surcharge statute will increase to 41%.

demonstrates that the ability to surcharge has had no effect in constraining merchant fees in either country. This natural experiment is particularly telling because the retail economies in Australia and the UK are typically less competitive and thus more prone to surcharging than in the U.S.: neither Australia nor the UK restricts surcharging in certain regions as do ten states in the U.S., and neither Australia nor the UK requires equal surcharging of all credit-card networks as does the proposed settlement.

A. Restrictions on Surcharging Will Limit Its Use

i. State Restrictions on Surcharging

- 53. I understand that surcharging is currently prohibited in ten states, which represent approximately 35% of U.S. commerce. Some merchants have significantly more than 35% of their business in the states which prohibit surcharging. Many firms filed declarations in this case stating they would not surcharge in any state if it were prohibited in the current states that prohibit the practice because of operational reasons. California, Florida, and Texas all prohibit surcharges.
- 54. A second problem arises in Internet and other "card-not-present" ("CNP") transactions where credit-card usage is especially prevalent. While a merchant would know the shipping address for the package, other transactions such as airline tickets could well create problems since a person's geographical location when making the transaction may not correspond to the billing address of the credit card. If a consumer is in a San Francisco hotel buying an airplane ticket on a credit card from another state, the airline

Calculation based on retail trade volume by state. Source: U.S. Bureau of the Census, Economic Census (2007). If population is used, the percentage remains at 35%. Puerto Rico has also banned surcharges.

See, e.g., Aldo ¶¶ 15-18; Beall's ¶¶ 16-17; Brookshire ¶¶ 12-13; Dillard's ¶¶ 14-15; Drury Hotels ¶¶ 19-21; Panda RG ¶¶ 13-17; PetSmart ¶¶ 12-15; RaceTrac ¶¶ 17-18; The Wet Seal ¶¶ 14-17.

In 2009 for credit cards, CNP transactions comprised about 29% by value of all credit-card transactions. See Federal Reserve System, "2010 Federal Reserve Payments Study: Noncash Payment Trends in the United States," Exhibit 74, p. 55 (Attachment N). In 2011, CNP transactions comprised about 33% by value of signature debit transactions. See Board of Governors of the Federal Reserve Board, "2011 Interchange Fee Revenue, Covered Issuer Costs, and Covered Issuer and Merchant Fraud Losses Related to Debit Card Transactions" (Mar. 5, 2013) (Attachment O).

- would not know the consumer's location when buying the ticket and could violate California's no surcharge law.³⁹
- 55. A third complication arises, even if the geographical locations are known. Should the merchant's location or the customer's location determine whether a given state's no-surcharge provision applies? I understand that the answer involves a "choice-of-law" provision for a transaction, but the determination is not altogether clear. Thus, legal challenges to surcharges could well occur which would deter merchants from using surcharges.
- 56. Fourth, price-comparison services on the Internet could not deliver the lowest price for a product without knowing the surcharge amount that a given merchant would apply to a transaction. Since consumers often decide to buy an identical product at the lowest price, merchants could not quote a price without knowing where the consumer was geographically located when making the transaction. Merchants would not typically have this information when a consumer used the Internet to find the lowest price of a product.
- 57. Dr. Frankel claims (¶ 73) that, since Visa and MasterCard have historically set interchange fees on a nationwide basis, the effect of surcharging in states which do not have surcharge restrictions will cause credit-card networks to reduce interchange rates across the U.S. In the first place, how Visa and MasterCard price says nothing about the effect of the settlement's limited surcharging on AMEX's merchant fees. AMEX does not have nationwide merchant fee tables as do Visa and MasterCard; to the extent AMEX negotiates merchant fees, it does so with a small number of individual merchants.

 Second, I have significant doubts about Dr. Frankel's claimed outcome and Dr. Frankel has done no economic analysis to support it. Economic factors such as competition among retail merchants and state prohibitions on surcharging will lead to an outcome in which there will not be enough surcharging pressure for a nationwide decrease in AMEX merchant fees. To the extent that any impact occurs, the impact will be on a state-by-state basis since AMEX (and VMC) has demonstrated the ability to price discriminate on numerous occasions. For example, AMEX (and VMC) has charged different merchant

See, e.g., 05-md-1720, Dkt. No. 1681-16 (Declaration of Tom Sullivan, Expedia) (**Attachment P**), ¶11; Barnes & Noble ¶ 17.

fees for different types of commerce, e.g., higher fees for CNP transactions or lower fees for supermarkets. No technical difficulty exists for AMEX (or VMC) to charge different merchant fees in different states, to the extent that surcharging is prevalent in states which permit it.

To conclude, as an economic matter, that surcharging in some states would sufficiently influence the credit-card networks' pricing in other states, one would first need to know the likely level of surcharging in those states that permit it. To do that, one would need to assess the profitability of surcharging for each merchant that can do so in accordance with state law. That requires analysis of several merchant-specific factors: (i) the extent to which the merchant's customers, when faced with credit-card surcharges, would stop patronizing that merchant in favor of that merchant's competitors that do not or cannot surcharge; (ii) the extent to which the merchant's customers would continue to patronize the merchant but shift transaction volume to debit cards (the "diversion ratio" which is the percentage of credit transactions diverted to debit by surcharging); and (iii) the revenue per dollar transacted for credit-card transactions vs. debit-card transactions. Dr. Frankel fails to analyze any of these factors, although he has previously concluded that:

A merchant losing even a few sales as a result of refusing a costly brand of payment card may find it more profitable to pay the higher card acceptance fees on transactions made using that card brand. Merchants risk losing sales... 40

59. Dr. Frankel's unsupported conclusion regarding the nationwide effects of surcharging cannot be accepted given the state prohibitions on surcharging and competitive constraints on merchants which indicate that the amount of surcharging will likely not be large enough to have a system-wide impact or even cause reductions in states which permit surcharging.

ii. The Settlement's Adoption of Equal Surcharging

60. I understand that, according to the settlement, no differential surcharge amounts will be allowed. Dr. Frankel correctly notes that price differences through "surcharges" or "discounts" are common in the U.S. retail economy. Frankel Decl. ¶ 19. He states (¶ 20):

⁴⁰ Frankel, op. cit., 2007, p. 4.

When the cost or profitability to the merchant of selling one product (or service) differs significantly from another, it is common for the merchant to set different prices (or other terms of sale) for the two products. It surprises no one if a merchant posts different prices per pound for apples and oranges, or for different varieties of apples.

However, the proposed settlement prohibits just this type of competitive behavior. While AMEX acceptance usually costs a merchant more than VMC or Discover acceptance, the proposed settlement will not permit a merchant to base its surcharge on the costs of acceptance. Instead, the AMEX surcharge cannot exceed the VMC or Discover surcharge. For almost all the Objectors who have asked me to analyze the proposed settlement, their average cost of AMEX acceptance is above their average cost of VMC acceptance. Further, surcharges on VMC credit-card transactions are capped by the settlement in the *Interchange MDL* which requires the surcharge to be at the lowest possible amount. *See In re Payment Card Interchange Fee and Merchant Discount Antitrust Litig.*, No. 05-MD-1720 (JG) (JO), Dkt. No. 1656-1 (Oct. 19, 2012) ("MDL 1720 Settlement"), ¶¶ 42(a); 55(a) (**Attachment Q**) (excerpts).

In my view, the outcome of this equal-surcharging restriction will be oligopoly behavior where AMEX is likely to increase its merchant fees relative to VMC fees. AMEX, although it has market power, is constrained to a limited extent by VMC's lower, but still supra-competitive, fees. However, a surcharging merchant would surcharge all cards equally and AMEX can increase its merchant fees knowing that the merchant cannot charge a higher amount for use of the AMEX card. Even if the merchant's customer pays the surcharge instead of shopping elsewhere, the customer will be unlikely to shift to a VMC or Discover card because the surcharge would be the same and because many customers will believe that the merchant will recover its credit-card fees with the surcharge. AMEX can then use part of its increased merchant fees to increase its reward offers to credit-card customers. AMEX can thus increase its profits from both its higher merchant fees and from its increased credit-card volume.

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See, e.g., Buc-ee's ¶ 9; Best Buy ¶ 13; The Buckle ¶ 11; Crate & Barrel ¶ 12; Drury ¶ 14; Express ¶ 9; HMSHost ¶ 11; Martin's Super Markets ¶ 11; The Mills Companies ¶ 11; Pet Smart ¶ 9; Republic Services ¶ 14; Roundy's ¶ 11; Speedway ¶ 9; Yum! Brands ¶ 10.

- 62. An even worse possible result is the "price fix" outcome. Since AMEX and VMC will all realize that the allowed surcharge will be identical among the three cards, they may all increase their merchant fees. ⁴² For merchants that surcharge, AMEX and VMC may lose a marginal amount of business to debit cards or cash, but a large percentage of customers will continue to use credit cards. And for the majority of merchants who do not surcharge, AMEX and VMC will be able to charge higher merchant fees.
- The equal-surcharging requirement also removes a potential source of leverage that some merchants may otherwise be able to use in playing off AMEX against VMC. A small number of large merchants or merchants facing little competition may be able to bargain over merchant fees and other aspects of AMEX acceptance. If such a merchant could surcharge AMEX while not surcharging VMC, or surcharge AMEX at a higher rate than VMC in line with AMEX higher merchant fees, the merchant would have some ability to bargain for lower merchant fees from AMEX. The proposed settlement eliminates this ability and removes a potential source of limited competition that merchants could create among AMEX and its competition: Visa, MasterCard, and Discover.
- 64. In practice, the settlement's modification of AMEX's surcharging rule will have significant limitations which will restrict its effect. I now analyze the likely effect of the rule's modification without taking account of the effect of state legislative restrictions on surcharging. I find that, even without these legislative restrictions, modification of the rule will not mitigate AMEX's market power.

B. Analyzing the Evidence on the Effectiveness of Surcharging

- 65. The primary question I analyze in this section is whether permitting surcharging will lead to reduction of AMEX merchant fees as Dr. Frankel claims (¶¶ 24, 58).
- 66. Dr. Frankel has emphasized the increase in surcharging in Australia since government regulation permitted surcharging there in 2003, as evidence that surcharging AMEX would reduce AMEX merchant fees. However, the ability to surcharge AMEX has not

⁴² Indeed, my understanding of the settlement in *In re Payment Card Interchange Fee and Merchant Discount Antitrust Litigation* is that Visa and MasterCard will post the maximum surcharge amounts on their websites, making the "price fix" outcome easier to achieve since AMEX and VMC will know immediately, and by how much, merchant fees (and interchange) have increased.

reduced AMEX merchant fees in Australia. Further, it is even less likely that surcharging would reduce AMEX merchant fees in the U.S. because of greater retail competition in the U.S. than Australia and state prohibitions on surcharging in the U.S., and because the proposed settlement does not permit differential surcharging of credit-card networks while Australia does.

i. Surcharging AMEX in Australia Has Not Reduced AMEX Merchant Fees

- 67. As an initial matter, the payments industry in Australia is different from the payments industry in the U.S. because the Reserve Bank of Australia ("RBA") regulates interchange rates in Australia by setting a benchmark on credit-card interchange rates for both Visa and MasterCard, but not for AMEX or Diners. Visa and MasterCard are able to set different interchange rates for different types of cards (e.g., higher interchange for rewards cards) or for different types of merchants (e.g., service stations). However, the dollar-weighted average interchange rates of all credit cards, separately for Visa or MasterCard, must not exceed the ceiling, which is now 0.50%. 43
- 68. Dr. Frankel claims (¶ 62 and Figure 6) that the ability to surcharge in Australia has led to lower merchant fees for AMEX and Diners. Although AMEX and Diners are not subject to fee regulation in Australia, their merchant fees have decreased since the regulation of VMC went into effect in 2003. However, their merchant fees are substantially higher than the regulated rates for VMC (see Table 1 below). Moreover, the ratio of AMEX merchant fees to VMC merchant fees has increased since RBA regulation, as Table 1 below shows. In other words, AMEX has grown relatively more expensive than VMC since Australia began allowing surcharging over 10 years ago. In my view, the decreases in AMEX's fees have been due to the lower regulated interchange rates of VMC and merchants' ability to refuse to accept AMEX, as almost all AMEX credit-card holders in Australia also have a Visa or MasterCard card issued by their bank which also issues

⁴³ RBA, "Payments System Board Annual Report," pp. 14-15 (Sept. 10, 2012) (**Attachment R**).

Merchant fees in Australia decreased by an amount greater than the change in interchange rates. This continued a downward trend in processing fees observed in Australia and other countries because of decreasing costs of computer technology and telecommunications.

For example, the ratio of AMEX to VMC merchant fees was 1.73 in 2003 and increased to 2.08 in 2013, for an increase of 20.5%.

their AMEX cards. Thus, it is the ability of merchants not to accept AMEX (and Diners), rather than the ability to surcharge, which has forced AMEX and Diners to decrease their rates. The RBA came to the same conclusion:

Merchant service fees charged by both American Express and Diners Club have been under downward pressure as merchants have reviewed their acceptance of these cards given the increase in their relative costs compared to MasterCard and Visa cards. 46

69. This outcome is demonstrated by RBA data.

Table 1: Australia Merchant Fees

Percent Merchant Discount Fee

	V/MC	Amex	Diners
2003 (March)	1.45	2.51	2.36
2004	1.05	2.43	2.31
2005	0.98	2.36	2.31
2006	0.94	2.24	2.24
2007	0.89	2.18	2.18
2008	0.87	2.10	2.13
2009	0.87	1.98	2.12
2010	0.87	1.93	2.12
2011	0.86	1.88	2.10
2012	0.84	1.81	2.03
2013	0.83	1.73	2.02

Note that AMEX merchant fees remain 0.90% (90 basis points) above the VMC merchant fees, which has been their approximate position since surcharging was introduced in 2003. ⁴⁷ Further, AMEX and Diners merchant fees are significantly <u>higher</u> than the VMC merchant fees before RBA regulation began, as Table 1 demonstrates. In its December 2013 survey, East and Partners found a higher gap of 1.08% between AMEX and VMC merchant fees, somewhat higher than the RBA found and

⁴⁶ RBA, "Reform of Australia's Payment System: Preliminary Conclusion of the 2007/08 Review," pp. 20 (Apr. 2008) (RBA April 2008 Report) (**Attachment S**).

The RBA reports that in March 2003, before regulation was introduced, the interchange gap between VMC and AMEX was 1.06% or 106 basis points. The most recent data from December 2013 has the interchange gap at 0.90% or 90 basis points. Source: RBA, "C3 Average Merchant Fees for Debit, Credit and Charge Cards" (2014) (Attachment T)...

- approximately the same as March 2003, before the RBA introduced regulation of VMC in Australia.48
- 70. In Table 1, the large decrease in VMC merchant fees in 2004 occurred because of RBA regulation, which set maximum average VMC interchange fees at 0.55%. The RBA decreased the regulated maximum average VMC interchange rate to 0.50% in 2007.
- 71. Further, despite the approximate 100-basis-point difference and the ability to surcharge, the AMEX + Diners transaction volume share increased from 14.9% in 2003, when surcharging was introduced and VMC interchange was reduced by regulation, to 19.4% in 2013.49 Thus, surcharging has not constrained AMEX and Diners merchant fees; to the contrary, their shares have increased even though they continue to charge a higher price to merchants than VMC. 50 When the higher-price alternative gains share as has happened in Australia, I conclude that surcharging has not been effective in decreasing merchants' fees. RBA regulation has caused VMC merchant fees to decrease, which has required AMEX and Diners to lower their merchant fees. Yet the "merchant fee gap" has remained relatively constant and the relative price of AMEX + Diners has increased while at the same time their share has also increased.⁵¹ Merchants now pay higher merchant fees on AMEX (1.73%) and Diners (2.02%) transactions which have shifted from VMC than they paid on the VMC transactions (1.45%) before regulation began, as Table 1 demonstrates.

ii. Amount of Surcharging in Australia

72. The actual amount of surcharging in Australia is significantly less than Dr. Frankel's data suggest. In his Figure 4 (p. 19), he has surcharging in 2013 ranging from about 33% for very small merchants to about 65% for very large merchants. For 2010, he has surcharging by very small merchants at about 22% and by the largest merchants at about 45%. Yet in a survey conducted by the RBA in 2010, survey respondents stated that they paid a credit-card surcharge on only 4% of transactions made in person and 18% for

⁴⁹ Source: RBA, "C2 Market Shares of Credit and Charge Card Schemes" (2014) (**Attachment U**).

East and Partners, op. cit., p. 11 and Table 22, p. 30.

Note that the 2013 merchant fees from AMEX and Diners exceed the pre-regulation merchant fees of VMC. Thus, the volume shift to AMEX and Diners post-regulation has increased their costs, although the cost of the VMC volume has decreased due to regulation.

By relative price, I mean the ratio of the prices.

credit-card transactions online (CNP).⁵² Overall, consumers paid surcharges on 5% of their credit-card transactions, with the percentage unchanged between 2007 and 2010. Dr. Frankel's focus on the percentage of merchants who surcharge on some transactions is misguided since it is the volume of transactions that are surcharged which provides the important economic factor.

- 73. In Australia, the large difference between the percentage of merchants claiming to surcharge and transactions which are surcharged is likely to arise, in part, from merchants surcharging only on CNP (Internet or telephone) transactions in certain niche areas (e.g., travel and airline tickets), which are much less prevalent than card-present transactions. For CNP transactions, only credit cards and Visa and MasterCard debit are available for use. Regular bank debit cards (EFTPOS) cannot be used on CNP transactions. Dr. Frankel does no analysis of what percentage of surcharging he discusses (¶ 41 and Figure 5) arises from CNP transactions.
- The other major sources of surcharging in Australia are on AMEX and Diners which have much higher differences in merchant fees than VMC in Australia (AMEX 1.73% vs. VMC 0.83%). Since Australian banks issue customers both an AMEX card and either a Visa card or a MasterCard card, merchants know they are very unlikely to lose a customer if they surcharge AMEX transactions. Dr. Frankel discusses this large difference in merchant fees (¶ 40) and the resulting much higher percentage of surcharging on AMEX (81.5%, Figure 5) than on VMC (37.9%), but he neglects to explain that, under the proposed settlement in the U.S., the surcharge for VMC would equal the surcharge for AMEX, which is a totally different situation than Australia and which will result in the consumer shopping elsewhere rather than switching to a VMC card that is not surcharged.⁵⁴

⁵² RBA, "A Variation to the Surcharging Standards: Final Reforms and Regulation Impact Statement," p. 5 (June 2012) (**Attachment V**). See also, Bagnall et al., op. cit., p. 32.

Bagnall et al., op. cit., p. 16. The Internet payment alternative BPAY is largely used for bill payments, not for individual Internet transactions (p. 22).

Dr. Frankel instead states that the merchant fees are higher in the U.S. than in Australia, from which he concludes that many U.S. merchants will surcharge. Frankel Decl. ¶ 42. But he fails to note that the different situation in Australia than the U.S. leads to surcharging on AMEX but often not on VMC. Further, it is not the level of merchant fees but rather the large difference between AMEX and VMC credit card fees in Australia which leads to a high degree of surcharging of AMEX since customers can use their VMC cards, typically without a surcharge. This

- 75. Dr. Frankel finds that, in Australia, AMEX customers do not leave the store when AMEX cards are surcharged. Frankel Decl. ¶ 55. However, he fails to note that the largest portion (42%) of these customers "pay by alternative" card which are typically VMC cards which will not be surcharged. Almost all AMEX customers in Australia have VMC cards since their banks issue both cards to their credit-card customers who choose AMEX cards. The situation will be very different under the proposed settlement since AMEX and VMC surcharges will be identical.
- 76. In Australia, the RBA reported the results of a merchant survey regarding barriers to surcharging:

The survey suggests that the fear of losing customers is the main reason merchants do not surcharge, but some merchants cite administrative or technological difficulties.

The greater the amount of competition in a given retail sector, the greater economic disincentive to surcharge, unless (almost) all firms in the sector surcharge. This outcome is unlikely to occur because some merchants will attempt to gain a competitive advantage by not surcharging. With relatively greater competition in most retail sectors in the U.S. than in Australia, I expect merchant surcharging to be even further less significant in the U.S. than Australia.⁵⁷

77. Utilities, airlines (Qantas in Australia), and other merchants that do not face large amounts of competition may surcharge, but merchants in more competitive sectors are unlikely to surcharge because of the loss of customers and incremental profits. Dr. Frankel points to utilities, governments, and universities imposing "convenience fees" as examples of merchants surcharging (¶¶ 36, 50). They are the exception that proves the

situation of a large difference in credit card merchant fees would not exist in the U.S. under the proposed settlement if AMEX is surcharged an identical surcharge as that levied on VMC cards. As discussed below, Australia data refute the proposition that the difference between credit and debit rates will motivate merchants to engage in such surcharging given the potential to lose sales and profits from surcharging.

Indeed, after over 10 years the percentage of merchants who surcharge on VMC is only about 38% and a significant (but unknown) proportion is from CNP Internet transactions where almost no other payment options other than credit cards are utilized.

 $^{^{56}}$ RBA, "Payments System Board Annual Report (2008) ($\pmb{Attachment~W}$), pp. 13-14 .

John Robinson of IKEA US calls the U.S. the "most competitive retail market on earth." Declaration of John Robinson, *Interchange MDL* (E.D.N.Y. Oct. 29, 2012), Doc. 1681-17 (Exhibit 138) (**Attachment X**), ¶ 6. See also J. Hausman and E. Leibtag, "Consumer Benefits from Increased Competition in Shopping Outlets: Measuring the Effect of Wal-Mart," *Journal of Applied Econometrics* (2007) (**Attachment Y**).

- rule that the large majority of merchants will not surcharge. Utilities and governments face little or no competition, and students will not transfer from their university because it surcharges credit cards.
- 78. Nor has surcharging led to a significant shift to debit cards in Australia. Contrary to Dr. Frankel's selective quotes, RBA data demonstrate that the growth rate of the dollar amount of credit-card usage increased by 10.2% in the most recent 12-month period ending in December 2013. This percentage increase is the highest percentage increase in credit-card usage in Australia in the past six years. The percentage increase exceeds the increase in debit-card usage in Australia over the same period. The percentage increase exceeds the increase in debit-card usage in Australia over the same period.
- 79. Further, Dr. Frankel provides no explanation as to why the majority of merchants still pay higher VMC fees in Australia relative to debit but do not surcharge, even though debit (EFTPOS) is much cheaper in Australia. My conclusion is that most merchants realize that an important segment of customers want to use credit cards and do not surcharge VMC because of the "business stealing" effect that I discuss above.
- 80. Surcharging has now been permitted nationwide in Australia for over 10 years. Yet it has had no effect on merchant fees. Thus, the Australian experience does not support the conclusion that the settlement will provide benefits to merchants in terms of lower merchant fees. To the contrary, it supports the conclusion that the settlement will not lower merchant fees even if the settlement permitted unrestricted surcharging (which it does not). The settlement's surcharging restrictions are a further reason why the settlement will not lower merchant fees.

Dr. Frankel does no actual empirical analysis of credit-card usage in Australia.

Source: RBA, "C1 Credit and Charge Card Statistics" (2014) (**Attachment Z**).

⁶⁰ Source: RBA, "C5 Debit Card Statistics" (2014) (**Attachment AA**).

VMC credit card transactions have equalled (or exceeded) the regulatory benchmarks in every year since regulation and surcharging began in Australia. The RBA made a similar finding and concluded that "upward pressure on these fees remains." RBA April 2008 Report, op. cit., pp. 21-22, 36 (Attachment S). (The weighted average interchange typically exceeds the regulatory ceiling on the triennial review data because VMC strategies have tended to increase average interchange revenue per transaction between compliance dates. Ibid, p. 21.) Thus, surcharging has also had no effect on average VMC interchange rates in Australia. Ibid.

iii. Effect of Surcharging in the UK

- 81. Credit-card surcharging has been permitted in the UK for more than 20 years, since 1992. However, as I explain, surcharging in the UK is at very low rates and has had no apparent effect on interchange rates, which remain quite high.⁶²
- 82. The most recent 2012 UK government study stated that most common credit-card surcharges are for on-line (CNP) payments in certain niche segments. A 2007 OFT (Office of Fair Trading) study found that 14% of businesses that accepted credit cards applied surcharges. The UK study found (p. 5):

The EDC survey indicated that almost no retailer applied a surcharge to over-the-counter cardholder-present transaction[s] (i.e., surcharging in store was very rare). There are two main reasons why retailers do not tend to surcharge over-the-counter transactions: (i) competition within the retail sector puts any retailer that imposes a payment surcharge at a competitive disadvantage; and (ii), it is difficult for retailers to distinguish card types at the point of sale in store.

The report notes (p. 5) that where surcharges are common, e.g., the airline sector, they most commonly apply to CNP transactions because "payment cards are often the only payment method offered by merchants for on-line transaction in the UK." Thus, data from the UK demonstrate that widespread card-present surcharging in the U.S. is unlikely given the highly competitive retail sector in the US. For example, IKEA attempted to surcharge in the UK but stopped because of negative customer reactions and dissatisfaction. ⁶³

iv. VISA Research on Surcharging

83. Visa has sponsored research that calls into question the effectiveness of surcharging. Visa Europe conducted a 2009 survey of 7,000 European consumers which "demonstrated extreme sensitivity to transactions based fees." Visa stated:

⁶⁴ Visa, "Acknowledging the consequences of surcharging," p. 3 (2009) (**Attachment CC**).

VMC have claimed previously that removal of the surcharging restrictions in the UK was ineffective. The RBA states: "[T]he schemes claim that removal of the restrictions will be ineffective because merchants in countries where such restrictions have been abolished (the United Kingdom, the Netherlands and Sweden) have not adopted surcharging in any material way...." RBA, "Reform of Credit Card Schemes in Australia IV, Final Reforms and Regulation Impact Statement," p. 27 (Aug. 2002) (Attachment BB).

⁶³ Declaration of IKEA US, op. cit., ¶ 31 (**Attachment I**).

Even in countries where surcharging is permitted, very few retailers choose to use the option as they recognise it does not encourage custom—nonetheless the very possibility of surcharging still has negative consequences.⁶⁵

Thus, consumer sensitivity to surcharging is likely to reduce credit-card use where surcharging is used in a given industry. However, some firms in a retail sector will be unlikely to implement surcharging because a significant proportion of consumers will respond to the surcharges by shopping at a competing merchant that does not surcharge. Competition among merchants, especially in highly competitive industries, will limit the use of surcharging.

84. Retail competition's limitation on surcharging is consistent with Visa's explanation of when surcharging is used in Australia, where it has been permitted since 2003. Visa stated, in 2009,

Experience has shown that consumers are most likely to be surcharged where they are in "captive" situations (that is, in instances where consumers do not have easy access either to an alternative means of payment or to a merchant who is not imposing a surcharge on card transactions). ⁶⁶

These "captive" situations include CNP transactions over the Internet in certain niche segments where PIN debit cards and cash cannot be used. ⁶⁷ Airlines and online travel agents in Australia are among those firms who impose surcharges on most transactions. Thus, Visa's consistent position has been that surcharging is not an effective strategy for businesses in competitive industries.

VII. The Settlement's Equal-Surcharging Restriction Will Lead to an Anticompetitive Outcome and Conflict Among Class Members' Economic Interests

85. Dr. Frankel recognizes that the proposed settlement prohibits merchants from differentially surcharging AMEX relative to VMC cards, even though AMEX merchant fees are higher than VMC merchant fees. Frankel Decl. ¶ 66. However, he fails to note how this constraint may well lead to an anticompetitive outcome, which I now explore.

⁶⁵ Ibid., p. 4.

⁶⁶ Ibid., p. 5.

Payment by check is very limited in Australia.

- As an example, suppose all the airlines that fly from New York City to London agreed that their fuel surcharges would be identical. Antitrust authorities would investigate and force the airlines to stop the practice. Agreement on surcharges (or other prices and fees) has an adverse effect on competition, as has been demonstrated by economic research a multitude of times. Yet the proposed settlement has just such an agreement since the AMEX surcharge must equal the VMC surcharges, even though AMEX merchant fees are higher than VMC merchant fees.
- 87. This restriction on competition will continue the oligopoly situation in the credit-card market where Visa, AMEX, and MasterCard have 95% of credit-card volume. All three companies charge approximately similar merchant fees for different categories of retail commerce, although AMEX merchant fees are typically somewhat higher, and very little (or no) competition exists to cause a merchant to adopt a given credit card exclusively by offering it a lower merchant fee. By causing surcharges to be identical, the economic incentive to discount merchant fees is greatly reduced or eliminated. The ability of merchants to obtain lower merchant fees from AMEX is eliminated because the merchants cannot threaten to surcharge only AMEX or to surcharge AMEX at a higher rate, in line with AMEX higher merchant fees. This outcome will occur because, to a consumer, no incentive exists to use the lower-merchant-fee card since the surcharge across all three brands of cards will be identical.
- 88. While the proposed settlement adversely affects competition to lower merchant fees, it could also lead AMEX to <u>increase</u> its merchant fees. AMEX will know that, when it increases its merchant fees relative to VMC, the merchant cannot increase its surcharge relative to VMC nor can it surcharge only on AMEX. Thus, a merchant will only have the option of refusing to accept AMEX, which is unlikely to occur given that 90% of credit card volume occurs at stores that accept AMEX. Merchants who decide not to surcharge because of competition, or who cannot surcharge because of state law, will be made <u>worse off</u> by the proposed settlement because they will pay higher merchant fees to

Indeed, agreements among airlines on cargo fuel surcharges have led to hundreds of millions of dollars in fines in the U.S., Japan, Australia, and the UK and EU.

Perhaps the best example is the airline industry where uniform prices set by government regulation ended, and airline prices decreased and passenger demand increase by substantial amounts. See, e.g., S. Morrison and C. Winston, <u>The Evolution of the Airline Industry</u>, (Washington, D.C., Brookings Institution Press, 1995)

- AMEX and will receive no benefit, such as a cash payment for past supra-competitive AMEX fees and anti-competitive behavior.
- 89. Thus, a potential conflict among class members exists. Merchants in less competitive sectors and who have a majority of their credit-card usage as CNP (e.g., Internet sales) are more likely to surcharge and, thus, benefit from the proposed settlement. Merchants in more competitive sectors and especially small- and medium-size merchants are unlikely to surcharge, as the Australian data demonstrate, and they will receive no benefit from the settlement since no cash payment will be received. These merchants are likely to be made worse off by AMEX increasing its merchant fees after the proposed settlement.

VIII. Conclusions

- 90. The surcharging permitted by the proposed settlement will not eliminate the market power exercised by AMEX. Nor will it lead to a decrease in the supra-competitive merchant fees charged by AMEX. Indeed, the reverse may happen and AMEX may be able to increase its merchant fees.
- 91. While a small number of merchants may be able to utilize the proposed settlement's limited surcharging provisions, there is no basis to conclude that such isolated surcharging would have any system-wide impact.
- 92. Several additional factors, individually and collectively, severely limit the value of the proposed settlement's new surcharging rules. These additional factors include the competitive U.S. retail environment and legal prohibitions against surcharging in states representing approximately 35% of U.S. commerce.
- 93. Because of the highly competitive nature of the U.S. retail industry and given the experience of over 10 years of surcharging in Australia and 20 years of surcharging in the UK, there is no basis to conclude that surcharging will have a system-wide impact.
- 94. The settlement's provisions that prohibit merchants from using higher surcharges for AMEX than VMC surcharges, even though AMEX merchant fees are higher than VMC merchant fees, will increase the likelihood of a continuation of the current oligopoly outcome. Merchant fees will not decrease and may well further increase. Even worse,

since the surcharge amounts of AMEX and VMC will be the same under the settlement, an outcome equivalent to price fixing among the three major credit-card competitors will occur.

95. Since Dr. Frankel makes no claims that the settlement will lead to reduced AMEX merchant fees relative to VMC merchant fees, and I expect AMEX merchant fees to remain the same or increase if the settlement occurs, the majority of merchants will receive no economic benefit from the settlement or be made worse off by it, since no cash payment is proposed in the settlement.

Jerry Allen Hausman

June 6, 2014

REPORT OF PROFESSOR JERRY HAUSMAN

ATTACHMENT LIST

Attachment	Description
A	Jerry A. Hausman Curriculum Vitae
В	Statement of Irene Katen before H. Subcomm. On Financial Inst. Of the H. Comm. On Banking and Financial Services (Sep. 24, 1997)
С	Memorandum & Order, <i>United States v. American Express Co.</i> , No. 1:10-cv-04496-NGG-RER (E.D.N.Y. May 7, 2014)
D	Pulse 2013 Debit Issuer Study (Oct. 30, 2013)
E	Report of Professor Jerry Hausman, <i>In re Payment Card Interchange Fee and Merchant Discount Antitrust Litig.</i> , No. 05-md-1720 (" <i>Interchange MDL</i> ") (E.D.N.Y. May 28, 2013) (excerpts)
F	The Globe and Mail, "Competition Bureau Says Credit Card Issuers Set Up Perverse System," Jun. 18, 2012
G	J. Bagnall, S. Chong and K. Smith, "Strategic Review of Innovation in the Payments Systems: Results of the Reserve Bank of Australia's 2010 Consumer Payments Use Study" (2011)
Н	ImpactPR, "Shoppers Resent Credit Card Charge Research" (Apr. 2012)
I	Declaration of IKEA US, Interchange MDL (E.D.N.Y. May 25, 2013)
J	A. Frankel, "Towards a Competitive Card Payments Marketplace," Reserve Bank of Australia Conference (Nov. 29, 2007) (excerpts)
K	C. Hsiao, B. Sun and V. G. Morwitz, "The role of stated intentions in new product purchase forecasting," <i>Advances in Econometrics</i> , Vol. 16 (2002)
L	P. Chandon, V. G. Morwitz and W. J. Reinartz, "Do Intentions Really Predict Behavior? Self-Generated Validity Effects in Survey Research," <i>Journal of Marketing</i> , Vol. 69 (April 2005)
M	V. Morwitz, J. H. Steckel and A. Gupta, "When do purchase intentions predict sales?," <i>International Journal of Forecasting</i> 23 (2007)
N	Federal Reserve System, "2010 Federal Reserve Payments Study: Noncash

Payment Trends in the United States: 2006-2009" (Apr. 5, 2011) (excerpts)

- O Board of Governors of the Federal Reserve System, "2011 Interchange Fee Revenue, Covered Issuer Costs, and Covered Issuer and Merchant Fraud Losses Related to Debit Card Transactions" (Mar. 5, 2013)
- P Declaration of Tom Sullivan, Expedia, 05-md-1720, Dkt. No. 1681-16 (Nov. 2, 2012)
- Q In re Payment Card Interchange Fee and Merchant Discount Antitrust Litig., No. 05-MD-1720 (JG) (JO), Dkt. No. 1656-1 ("MDL 1720 Settlement") (Oct. 19, 2012) (excerpts)
- R Reserve Bank of Australia, "Payments System Board Annual Report" (Sept. 10, 2012) (excerpts)
- S Reserve Bank of Australia, "Reform of Australia's Payment System: Preliminary Conclusion of the 2007/08 Review" (Apr. 2008) (excerpts)
- T Reserve Bank of Australia, "C3 Average Merchant Fees for Debit, Credit and Charge Cards" (2014)
- U Reserve Bank of Australia, "C2 Market Shares of Credit and Charge Card Schemes" (2014)
- V Reserve Bank of Australia, "A Variation to the Surcharging Standards: Final Reforms and Regulation Impact Statement" (June 2012) (excerpts)
- W Reserve Bank of Australia, "Payment Systems Board Annual Report" (2008) (excerpts)
- X Declaration of John Robinson, IKEA USA, *Interchange MDL* (E.D.N.Y. Oct. 29, 2012), Doc. 1681-17
- Y J. Hausman and E. Leibtag, "Consumer Benefits from Increased Competition in Shopping Outlets: Measuring the Effect of Wal-Mart," *Journal of Applied Econometrics* (2007)
- Z Reserve Bank of Australia, "C1 Credit and Charge Card Statistics" (2014)
- AA Reserve Bank of Australia, "C5 Debit Card Statistics" (2014)
- BB Reserve Bank of Australia, "Reform of Credit Card Schemes in Australia IV, Final Reforms and Regulation Impact Statement" (Aug. 2002) (excerpts)
- CC Visa, "Acknowledging the consequences of surcharging" (2009)